

What is claimed is:

1. A washing apparatus comprising:

(a) a driving side base (7) having a rotary drive unit (8); and

(b) a washing tank (1) having a stirring blade (2);

wherein a rotational drive of the rotary drive unit is able to transmit to the stirring blade when the washing tank is mounted on top of the driving side base.

2. A washing apparatus comprising:

(a) a driving side base (7) having a rotary drive unit (8) and a second transfer joint (10),

the second transfer joint being connected to the rotary drive unit and able to rotate; and

(b) a washing tank (1) for storing the laundry,

where the washing tank includes:

an opening formed at the upper portion of the washing tank;

a rotatable shaft (5) piercing through the bottom of the washing tank;

a rotatable stirring blade (2) disposed on the shaft inside the washing tank; and

a first transfer joint (6) disposed on the shaft, outside the bottom of the washing tank, and serves to transfer a rotational drive to the stirring blade,

wherein the washing tank is mounted on top of the driving side

base and also separated from top of the driving side base;

when the washing tank is mounted on top of the driving side base, the first transfer joint and the second transfer joint come to engage each other; and

at a state that the washing tank is mounted on top of the driving side base, the stirring blade rotates when the rotary drive unit is operated.

3. The washing apparatus of claim 2,

wherein the stirring blade is fitted to an upper end of the shaft;

the first transfer joint is connected to a lower end of the shaft; and

at a state that the washing tank is mounted on the driving side base, when the rotary drive unit is operated, the rotational drive of the rotary drive unit is transferred to the stirring blade via the second transfer joint and the first transfer joint, thereby the stirring blade is rotated.

4. The washing apparatus of claim 2,

wherein the driving side base further comprises a rotating speed reducer (14) installed between the rotary drive unit and the second transfer joint.

5. The washing apparatus of claim 1 or 2,

wherein the driving side base further has a control means (16) for controlling the rotation of the stirring blade.

6. The washing apparatus of claim 1 or 2,

wherein the washing tank further comprises a grip portion (17) disposed close to the opening.

7. The washing apparatus of claim 1 or 2,

wherein the washing tank has at least one water level line (18) formed on the inner wall thereof, and the water level line indicates the level of the wash water poured into the washing tank.

8. The washing apparatus of claim 1 or 2,

wherein the washing tank has at least one wash assisting convex (19) disposed nearly vertically close to the bottom of the inner wall thereof.

9. The washing apparatus of claim 1 or 2,

wherein the washing tank further includes a cover (20) disposed at the opening, the cover being able to open and close.

10. The washing apparatus of claim 9,

wherein the cover has a lock mechanism (21) to keep the cover closed.

11. The washing apparatus of claim 9,

wherein the cover (20b) has a hole (23) for draining wash water in the washing tank, and

when the washing tank is inclined or turned upside down, the wash water is discharged out of the washing tank.

12. The washing apparatus of claim 11,
wherein the cover (20c) further includes a draining rib (24)
disposed at an exterior side of the hole.

13. The washing apparatus of claim 11,
wherein the cover (20d) further has a projection (25) disposed at
the washing tank side of the hole, and
the projection may prevent the hole from being closed with the
laundry.

14. The washing apparatus of claim 1 or 2,
wherein the washing tank (1d) further includes a bottom drain
hose (26) disposed nearly at the lower portion of the washing tank, and
the drain hose is used to discharge the wash water out of the
washing tank.

15. The washing apparatus of claim 14,
wherein the washing tank (1d) further comprises a lower cut-off
valve (29) disposed in the drain passage of the bottom drain hose, and
the lower cut-off valve serves to control the drain.

16. The washing apparatus of claim 1 or 2,
wherein the washing tank 1e further includes a feed water passage
(30) disposed near the upper portion of the washing tank, and

the feed water passage supplies water into the washing tank.

17. The washing apparatus of claim 1 or 2,
wherein the washing tank (1f) further comprises an upper drain
hole (32) disposed near the upper portion of the washing tank, and
an upper drain hose (33) connected to the upper drain hole.

18. The washing apparatus of claim 17,
wherein the washing tank further comprises an upper drain cut-off
valve (34) disposed in the drain passage of the upper drain hose (33a), and
the upper drain cut-off valve serves to control a drain.

19. The washing apparatus of claim 1 or 2,
wherein the driving side base (7c) has a guide (34) disposed at a top
of the driving side base, and
at a state that the washing tank is mounted on top of the driving
side base, the guide is connected to a lower portion of the washing tank.

20. The washing apparatus of claim 19,
wherein the driving side base (7d) further includes a tank fixing
support portion (36),
the washing tank (1g) further includes a tank fixing portion (37),
the tank fixing support portion and the tank fixing portion forms a
tank fixing lock mechanism, and
the washing tank is fixed on the driving side base by the tank fixing

support portion and the tank fixing portion.

21. The washing apparatus of claim 1 or 2,
wherein the driving side base (7e) further comprises a connection
detector (39) and a controller (40);

the connection detector serves to detect a connection and
separation between the driving side base and the washing tank 1h; and

the controller serves to control a rotation of the rotary drive unit (8)
with the output from the connection detector.

22. The washing apparatus of claim 1 or 2,
wherein the driving side base (7f) comprises a protective projection
41 disposed so as to cover a periphery of the second transfer joint (10).

23. The washing apparatus of claim 1 or 2,
wherein the driving side base (7g) includes a drain passage (42)
disposed at top of the driving side base, and
the drain passage serves to discharge a water staying around the
second transfer joint.

24. The washing apparatus of claim 1 or 2,
wherein the driving side base (7h) further comprises an internal
drain passage (43) disposed inside the driving side base,
the washing tank further (1I) has a drain hole (45) provided with a
drain valve, and

at a state that the washing tank is mounted on the driving side base, the drain valve opens, then the washing tank and the internal drain passage are connected with each other via the drain hole.

25. The washing apparatus of claim 24,
wherein the internal drain passage (43a) includes a drain control valve (50) to control the drain, and a drain control device (51) to control the drain control valve.

26. The washing apparatus of claim 25,
wherein the driving side base (7j) further includes at least one of a water level detector (52) to detect the wash water level in the washing tank 1i and a draining time adjusting device to set a specified drain time, and
the wash water is automatically drained when at least one of the water level detector and the draining time adjusting device is actuated.

27. The washing apparatus of claim 1 or 2,
wherein the driving side base (7k) further comprises an internal feed water passage (53) disposed in the driving side base, a water supply means 54, and at least one of a detector (57) and a water supply time adjusting device (58) disposed in the internal feed water passage;

the detector serves to detect the level of wash water in the washing tank;

the washing tank (1j) includes a washing tank feed water passage (56) having a feed water passage valve (55); and

only at a state that the washing tank is mounted on the driving side base, the feed water passage valve opens, then the washing tank and the internal feed water passage are connected with each other via the feed water passage valve, and the water is automatically supplied when at least either one of the water level detector and the water feed time adjusting device is actuated.

28. The washing apparatus of claim 1 or 2,

wherein the driving side base (7m) and the washing tank (1k) are structurally such that the driving side base can be stored in the washing tank.

29. The washing apparatus of claim 28,

wherein the driving side base (7n) further has a storing grip portion (59).

30. The washing apparatus of claim 28,

wherein the washing tank (1m) has a holding convex (60) disposed on the inner wall of the washing tank, and the holding convex serves to hold the driving side base

31. The washing apparatus of claim 30,

wherein the holding convex has a shape such that the holding convex also serves as a wash assisting convex.

32. The washing apparatus of claim 1 or 2,
wherein the driving side base (7p) further includes a battery (61) to
supply electric power to the rotary drive unit.

33. The washing apparatus of claim 1 or 2,
wherein the driving side base (7q) is storable under a floor (62) or
in a closet drawer (63).

34. The washing apparatus of claim 1 or 2,
wherein the driving side base (7r) further includes a change device
(64, 65) which is able to change the rotating speed and ON-OFF time of the
driving side base (8) at least in two steps.

35. The washing apparatus of claim 1 or 2,
wherein the washing tank is small-sized so that the user may
easily carry the tank.

36. The washing apparatus of claim 1 or 2,
wherein the washing tank is formed from at least either plastic
mold or metallic workpiece.

37. A method of washing a laundry, comprising the steps of:
(a) preparing a driving side base (7) having a rotary drive unit (8);
(b) preparing a washing tank (1) having a stirring blade (2);
(c) mounting the washing tank on top of the driving side base,

where the stirring blade and the rotary drive unit are connected with each other when the washing tank is mounted on top of the driving side base;

(d) putting a laundry into the washing tank;

(e) putting a water into the washing tank;

(f) driving the rotary drive unit at a state that the washing tank containing the laundry and water is mounted on the driving side base,

thereby the stirring blade is driven to stir the water and the laundry; and

(g) separating the washing tank being mounted on top of the driving side base from the driving side base.

38. The method of washing the laundry of claim 37,

wherein the driving side base (7) further comprises a second transfer joint (10) disposed on top of the driving side base;

the washing tank (1) includes a shaft (5) piercing through the bottom of the washing tank, and first transfer joint (6) disposed on the shaft, outside the bottom of the washing tank; and

in the step (c), when the washing tank is mounted on top of the driving side base, the first transfer joint (6) and the second transfer joint (10) come to engage each other, and the stirring blade and the rotary drive unit are connected with each other via the first transfer joint, the shaft and the second transfer joint.

39. The method of washing the laundry of claim 37,

wherein the driving side base further includes a tank fixing support portion (36), and the washing tank (1g) further includes a tank fixing portion (37);

the tank fixing support portion and the tank fixing portion form a tank fixing lock mechanism; and

in the step (c), the washing tank is fixed on the driving side base by the tank fixing support portion and the tank fixing portion.

40. The method of washing the laundry of claim 37, wherein the washing tank further has a grip portion (17), and in at least either one of the step (c) and the step (f), the washing tank is mounted on or removed from the driving side base by the user holding the grip portion.

41. The method of washing the laundry of claim 37, wherein the washing tank further includes a cover (20) which can be attached to and detached from the opening of the washing tank, and the cover has at least one of :
(i) a lock mechanism (21) to keep the cover closed and
(ii) a hole (23) to discharge the wash water out of the washing tank.

42. The method of washing the laundry of claim 37, wherein the washing tank further includes at least one selected from the group consisting of:

(i) a lower drain hose (26) disposed nearly at the lower portion of

the washing tank;

(ii) a feed water passage (30) disposed nearly at the upper portion of the washing tank;

(iii) an upper drain hole (32) disposed nearly at the upper portion of the washing tank; and

(iv) a holding projection (60) disposed on the inner wall of the washing tank.

43. The method of washing the laundry of claim 37,

wherein the driving side base further includes at least one selected from the group consisting of:

(i) a connection detector (39) to detect the connection and separation between the driving side base and the washing tank;

(ii) a control means (40) to control the rotation of the rotary drive unit;

(iii) a water level detector (52) to detect the level of wash water in the washing tank; and

(iv) a draining time adjusting device to set a specified draining time.

44. The method of washing the laundry of claim 37,

wherein the driving side base further includes at least one of:

(i) a drain passage (42) disposed at top of the driving side base; and

(ii) an internal drain passage (43) disposed inside the driving side base.